

ABSTRACT OF THE DISCLOSURE

A method of manufacturing an LDMOS transistor comprises providing a semiconductor substrate of a first conductivity type having a well region of a second conductivity type formed on a surface of the substrate. Ions of the first conductivity type are implanted into a part of the well region with a predetermined energy. The substrate is subjected to a heat treatment so that the implanted ions are diffused to form a diffusion region of the first conductivity type on the surface of the substrate. Then, a gate oxide layer and a gate electrode are formed on the surface of the substrate. Finally, a drain region is formed on the surface of the substrate. The predetermined energy for the implantation is set so that an accelerated oxidation during a formation of the gate oxide layer is inhibited.